

## CHROMOSOME NUMBERS OF SOME NORTHERN NEW JERSEY CARICES

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*Carex* is the largest genus of vascular plants in northeastern North America with 214 species treated in Gleason and Cronquist (1963). Chromosome counts for this group are still few and many of the reports have not been confirmed by additional counts. Aneuploid series have been documented in some species (Faulkner, 1972) and additional work is needed to determine if such series exist in other species. It is hoped that this paper will add some useful data to the knowledge of the group by reporting chromosome numbers taken from samples of the genus found growing in northern New Jersey.

All chromosome counts are taken from anther squashes using the procedure of Cooperrider and Morrison (1967). I prefer the 2% lactic-acetic-orcein stain because of the ease of staining the chromosomes (no heating), the excellent contrast obtained between the cytoplasm and chromosomes, and the convenience of a temporary mount without the necessity of sealing. In instances when the figures are too light, they can be left overnight to darken. Table 1 presents the chromosome counts obtained for eleven species along with locality data. Nomenclature follows that in Gleason and Cronquist (1963) except for *Carex emmonsii* Dewey (see discussion). Vouchers collected from plants in the field or from transplants grown outside the greenhouses on the Newark Campus of Rutgers University are on deposit at the New York Botanical Garden (NY). At least one drawing of a countable figure is affixed to each voucher sheet.

### DISCUSSION

**Carex blanda** Dewey. The count of  $n = 18$  is the first for this species. This is a close relative to *C. laxiflora*, and is regarded as a variety by Gleason and Cronquist (1963), while other authors (Small, 1933; Wiegand, 1922) maintain the taxon as a species. Until a revision is made, I have decided to follow the latter example.

**Carex brunnescens** (Pers.) Poir. A well counted species. The number of  $n = 28$  agrees with the counts of Heilborn (1939), Wahl (1940), Levan (1942), Jörgenson, Sörensen, and Westergaard (1958),

Table 1. Chromosome number and location of species of *Carex* examined in northern New Jersey.

Species	<i>n</i>	Location and Voucher
<i>C. blanda</i> Dewey <sup>1</sup>	18	SUSSEX CO. : Old, wet field, Summit Lake, Stockholm. <i>Whitkus 221</i> .
<i>C. brunnescens</i> (Pers.) Poir.	28	PASSAIC CO. : Wet woods, Bearfort Waters, Upper Greenwood Lake. <i>Whitkus 130</i> .
<i>C. crinita</i> Lam. var. <i>gynandra</i> (Schw.) Schw. & Torr.	34	PASSAIC CO. : Swamp, south end Bearfort Waters, Upper Greenwood Lake. <i>Whitkus 125</i> .
<i>C. emmonsii</i> Dewey	20	MORRIS CO. : Woods, north end Troy Meadows. <i>Whitkus 471</i> .
	20	MORRIS CO. : Woods, north end Troy Meadows. <i>Whitkus 473</i> .
	20	MORRIS CO. : Woods, north end Troy Meadows. <i>Whitkus 475</i> .
<i>C. folliculata</i> L.	28	PASSAIC CO. : Swamp, south end Bearfort Waters, Upper Greenwood Lake. <i>Whitkus 492</i> .
<i>C. gracillima</i> Schw.	27	SUSSEX CO. : Swamp, Summit Lake, Stockholm. <i>Whitkus 188</i> .
<i>C. pennsylvanica</i> Lam.	18	PASSAIC CO. : Pine slope, south end Bearfort Waters, Upper Greenwood Lake. <i>Whitkus 135</i> .
<i>C. scoparia</i> Schk.	34	PASSAIC CO. : Swamp, south end Bearfort Waters, Upper Greenwood Lake. <i>Whitkus 493</i> .
<i>C. seorsa</i> Howe.	24	SUSSEX CO. : Swamp, Summit Lake, Stockholm. <i>Whitkus 179</i> .
<i>C. stipitata</i> Muhl.	26	BERGEN CO. : Disturbed meadowlands, jt. of Rts. 80 and 17. <i>Whitkus 461</i> .
	26	BERGEN CO. : Disturbed meadowlands, jt. of Rts. 80 and 17. <i>Whitkus 464</i> .
	26	BERGEN CO. : Disturbed meadowlands, jt. of Rts. 80 and 17. <i>Whitkus 465</i> .
<i>C. stricta</i> Lam.	34	SUSSEX CO. : Budd Lake. <i>Morton 7285</i> .
	35	SUSSEX CO. : Budd Lake. <i>Morton 7286</i> .
	34	MORRIS CO. : Troy Meadows. <i>Whitkus 451</i> .
	34	MORRIS CO. : Troy Meadows. <i>Whitkus 454</i> .
	34	MORRIS CO. : Troy Meadows. <i>Whitkus 458</i> .
	34	MORRIS CO. : Troy Meadows. <i>Whitkus 459</i> .
	34	MORRIS CO. : Troy Meadows. <i>Whitkus 467</i> .
	34	MORRIS CO. : Troy Meadows. <i>Whitkus 468</i> .

<sup>1</sup>Identification provided by Charles T. Bryson.

Löve and Löve (1965), Löve and Ritchie (1966), Taylor and Mulligan (1968), and Dietrich (1972).

**Carex crinita** Lam. var. **gynandra** (Schw.) Schw. & Torr. Wahl (1940) reported two different numbers,  $n = 33$  and  $n = 33 + 2$ , neither of which agrees with the count of  $n = 34$ . However, this is a highly variable species and a chromosome series may be present.

**Carex emmonsii** Dewey. This species is placed, with *C. arctitecta* Mack., under variety *muhlenbergii* of *C. nigromarginata* Schw. in Gleason and Cronquist (1963). Fernald (1950) and Seymour (1969), however, recognize *C. emmonsii* as being specifically distinct from *C. arctitecta* and provide descriptions which seemingly fit the vouchers better than that given by Gleason and Cronquist. For this reason, I have decided to recognize *C. emmonsii*, and the count of  $n = 20$  is the first for the species.

**Carex folliculata** L. The count of  $n = 28$  agrees with that of Wahl (1940).

**Carex gracillima** Schw. Wahl (1940) reported a series with  $n = 25$ , 26, and 27. The count of  $n = 27$  fits into this series.

**Carex pensylvanica** Lam. The count of  $n = 18$  agrees with that of Wahl (1940).

**Carex scoparia** Schk. The count of  $n = 34$  differs from  $n = 32$  of Wahl (1940) and  $n = 30$  of Moore and Calder (1964).

**Carex seorsa** Howe. The count of  $n = 24$  appears to be the first published count of this species.

**Carex stipata** Muhl. The counts of  $n = 26$  confirm that of Wahl (1940) but differ with  $n = 24$  of Japanese material by Okuno (1939, 1940) and Tanaka (1939a, b).

**Carex stricta** Lam. The counts of  $n = 34$  confirm that of Tischler (1934). The Budd Lake population is unique in having both  $n = 34$  and 35 plants.

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